Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A MIMO-OFDM transmitter adapted to transmit a header symbol format in which sub-carriers of a header OFDM symbol are divided into a non-contiguous set of sub-carriers for each of a plurality of antennas, with each antenna transmitting the header OFDM symbol only on the respective set of sub-carriers.

2. (Original) A transmitter according to claim 1 wherein there are N antennas and a different set of sub-carriers separated by N sub-carriers is assigned to each of the plurality of antennas.

3. (Original) A transmitter according to claim 1 wherein the header symbols contain a multiplexed dedicated pilot channel on dedicated pilot channel sub-carriers and common synchronization channel on common synchronization channel sub-carriers for each of the plurality of antennas.

4. (Original) A transmitter according to claim 3 wherein the header OFDM symbols further contain multiplexed broadcasting sub-carriers for each of the plurality of antennas.

5. (Original) A transmitter according to claim 1, adapted to transmit a preamble having a prefix, followed by two identical OFDM symbols having said header OFDM symbol format.

6. (Original) A transmitter according to claim 5 wherein the prefix is a cyclic extension of the two identical OFDM symbols.

7. (Original) A transmitter according to claim 3 wherein the pilot channel sub-carriers have a BTS specific mapped complex sequence allowing efficient BTS identification.

8. (Original) A transmitter according to any one of claims 3 wherein the common synchronization channel is designed for fast and accurate initial acquisition.

9. (Original) A transmitter according to claim 3 wherein the common synchronization channel is used for course synchronization and fine synchronization and the pilot channel is used for fine

synchronization.

10. (Original) A transmitter according to claim 3 wherein the common synchronization channel is used to transmit a complex sequence which is different for each transmit antenna of one transmitter, but which is common for respective transmit antennas of different transmitters within a communications network.

11. (Original) A transmitter according to claim 1 adapted to transmit OFDM frames beginning with said preamble, and having scattered pilots throughout a remainder of the OFDM symbols in each OFDM frame.

12. (Original) A transmitter according to claim 1 wherein during the preamble, for each of N transmit antennas, dedicated pilot channel sub-carriers are transmitted and common synchronization channel sub-carriers are transmitted and broadcasting channel sub-carriers are transmitted.

13. (Original) A transmitter according to claim 3 wherein the sub-carriers of the preamble OFDM symbols are organized as a repeating sequence of {dedicated pilot channel for each of N transmit antennas, common synchronization channel sub-carrier for each of N transmit antennas} arranged in a predetermined order.

14. (Original) A transmitter according to claim 4 wherein the sub-carriers of the preamble OFDM symbols are organized as a repeating sequence of {at least one dedicated pilot channel sub-carrier for each of N transmit antennas, at least one common synchronization channel sub-carrier for each of N transmit antennas, at least one broadcast channel sub-carrier} arranged in a predetermined order.

15. (Original) A MIMO-OFDM receiver adapted to receive a header symbol format in which sub-carriers of a header OFDM symbol are divided into a non-contiguous set of sub-carriers for each of a plurality of antennas, with each antenna transmitting the header OFDM symbol only on the respective set of sub-carriers.

16. (Original) A receiver according to claim 15 adapted to receive from N transmit antennas with a different set of sub-carriers separated by N sub-carriers assigned to each of the plurality of transmit antennas.

17. (Original) A receiver according to claim 15 wherein the header OFDM symbols contain multiplexed dedicated pilot channel sub-carriers and common synchronization channel sub-carriers for each of the plurality of transmit antennas.

18. (Original) A receiver according to claim 17 wherein the header OFDM symbols further contain multiplexed broadcasting carriers for each of the plurality of antennas.

19. (Original) A receiver according to claim 15 adapted to receive a preamble having a prefix, followed by two identical OFDM symbols having said header OFDM symbol format.

20. (Original) A receiver according to claim 15 wherein the dedicated pilot channel has a BTS specific mapped complex sequence, the receiver being adapted to perform BTS identification on the basis of the dedicated pilot channel.

21. (Original) A receiver according to claim 19 wherein the dedicated pilot channel have a BTS specific mapped complex sequence, the receiver being adapted to perform BTS identification on the basis of the dedicated pilot channel.

22. (Original) A receiver according to claim 21 wherein the header OFDM symbols contain multiplexed dedicated pilot channel sub-carriers and common synchronization channel sub-carriers for each of the plurality of transmit antennas, the receiver being further adapted to perform course synchronization on the common synchronization channel by looking for a correlation peak between consecutive OFDM symbols which are identical.

23. (Original) A receiver according to claim 22 further adapted to perform fine synchronization on the basis of the common synchronization channel sub-carriers and/or the dedicated pilot channel sub-carriers.

24. (Cancelled)

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56. (Cancelled)

57. (New) A method comprising:

transmitting an OFDM preamble comprising a prefix followed by a plurality of correlated header symbols.

58. (New) The method of claim 57 wherein the prefix is a cyclic repetition of a portion of one of the header symbols.

59. (New) The method of claim 57 wherein the plurality of correlated header symbols comprises two header symbols.

60. (New) The method of claim 57 wherein the plurality of correlated header symbols comprises two identical symbols.

61. (New) The method of claim 57 wherein the plurality of correlated header symbols comprises two identical symbols, and wherein the prefix is a cyclic repetition of one of the header symbols.